Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for solving packing and component layout problems, comprising:

performing a pattern[[-]]based search on a computer, and

outputting a component layout resulting from result of said pattern[[-]]based search, said method characterized by driving the said pattern based search with a metric other than step size.

2. (original) The method of claim 1 wherein the metric for driving the search is based on a change in value of an objective function.

3. (original) The method of claim 1 wherein the metric for driving the search is a sensitivity of an objective function to component moves.

4. (currently amended) A method for solving packing and component layout problems, comprising:

determining the effect of a plurality of moves on a set of components;

performing a pattern[[-]]based search on a computer in response to based on said determining; and

outputting a component layout resulting from result of said pattern[[-]]based search.

5. (original) The method of claim 4 wherein said determining includes ranking each of said plurality of moves based on the change each move has on an objective function and ordering said moves from highest to lowest ranking.

6. (original) The method of claim 5 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

7. (original) The method of claim 5 wherein said determining additionally comprises dividing the range between highest and lowest rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

8. (previously presented) The method of claim 7 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings themselves.

9. (original) The method of claim 4 wherein said determining includes deriving a function that relates moves to changes in an objective function.

10. (original) The method of claim 4 wherein said determining includes determining the non-intersecting volume between an object and itself after applying a move.

11. (currently amended) A method for determining sensitivity for use in solving packing and component layout problems, comprising:

ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and

ordering the moves within a computer program for performing a pattern[[-]]based search from those moves having the highest ranking to those moves having the lowest ranking.

12. (original) The method of claim 11 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

13. (original) The method of claim 11 additionally comprising dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

14. (previously presented) The method of claim 13 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings themselves.

15. (original) The method of claim 11 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

16. (currently amended) A method for determining sensitivity for use in solving packing and component layout problems, comprising:

ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and

clustering said moves within a computer program for performing a pattern[[-]]based search into intervals based on said ranking.

17. (original) The method of claim 16 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

18. (original) The method of claim 16 wherein said clustering includes dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

19. (previously presented) The method of claim 18 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings themselves.

20. (original) The method of claim 16 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

21. (currently amended) A preprocessing method for determining sensitivity for use in solving packing and component layout problems, comprising:

    deriving a function that relates moves to changes in an objective function; and

    organizing the moves within a computer program for performing a pattern[[-]]based search based on in response to said function.

22. (original) The method of claim 21 wherein said deriving includes one of analytically, probabilistically and heuristically deriving.

23. (currently amended) A computer readable medium carrying an ordered set of instructions which, when executed, performs a pattern[[-]]based search, and outputs a component layout resulting from result of said pattern[[-]]based search, said method characterized by driving the said pattern based search with a metric other than step size.

24. (original) The device of claim 23 wherein the metric for driving the search is based on a change in value of an objective function.

25. (original) The device of claim 23 wherein the metric for driving the search is a sensitivity of an objective function to component moves.

26. (currently amended) A computer readable medium carrying an ordered set of instructions which, when executed, perform a method comprising:

    determining the effect of a plurality of moves on a set of components;

    performing a pattern[[-]]based search based on said determining; and

    outputting a component layout resulting from result of said pattern[[-]]based search.

27. (original) The device of claim 26 wherein said determining includes ranking each of said plurality of moves based on the change each move has on an objective function and ordering said moves from highest to lowest ranking.

28. (original) The device of claim 27 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

29. (original) The device of claim 27 wherein said determining additionally comprises dividing the range between highest and lowest rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

30. (previously presented) The device of claim 29 wherein said assigning is performed according one of a geometric progression based on said rankings and said rankings themselves.

31. (original) The device of claim 26 wherein said determining includes deriving a function that relates moves to changes in an objective function.

32. (original) The device of claim 26 wherein said determining includes determining the non-intersecting volume between an object and itself after applying a move.

33. (currently amended) A computer readable medium carrying an ordered set of instructions which, when executed, perform a method comprising:

ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and

ordering the moves within a <u>computer</u> program for performing a pattern[[-]]based search from those moves having the highest ranking to those moves having the lowest ranking.

34. (original) The device of claim 33 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

35. (original) The device of claim 33 additionally comprising dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

36. (previously presented) The device of claim 33 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings themselves.

37. (original) The device of claim 33 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

38. (currently amended) A computer readable medium carrying an ordered set of instructions which, when executed, perform a method comprising:

ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and

clustering said moves within a <u>computer</u> program for performing a pattern[[-]]based search into intervals based on said ranking.

39. (original) The device of claim 38 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

40. (original) The device of claim 38 wherein said clustering includes dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

41. (previously presented) The device of claim 40 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings themselves.

42. (original) The device of claim 38 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

43. (currently amended) A computer readable medium carrying an ordered set of instructions which, when executed, perform a preprocessing method comprising:

deriving a function that relates moves to changes in an objective function; and

organizing the moves within a <u>computer</u> program for.performing a pattern[[-]]based search <s>based on</s> <u>in response to</u> said function.

44. (original) The method of claim 43 wherein said deriving includes one of analytically, probabilistically and heuristically deriving.